CT scanning: too much of a good thing

PERSONAL VIEW **Steven Birnbaum**

On 30 August 2005, coming off a mostly sleepless night of on-call which mainly involved reading computed tomography (CT) scans in the emergency room, I received the phone call all parents dread. My ex-wife was on the phone, sobbing and telling me that our 23 year old daughter had been hit by a car while jogging and was in intensive care in a large, prestigious hospital with a head injury.

When I arrived at the intensive care unit, Molly was conscious but suffering from altered sensorium. Given the miracles of modern picture archiving and communication (PACS), I was able to review her radiological studies at her bedside with her nurse almost immediately. I realised that her injuries, although serious, would not be life threatening. She had had a basilar skull fracture, a severe concussion, pubic rami fractures, and a severe left knee injury. No immediate intervention would be required except for semi-elective knee surgery, and, given her age and excellent physical condition, a full recovery would be anticipated. CT scanning had been key in determining this prognosis. Molly had had a scan of the head and of the cervical spine, an arteriogram of her intracranial vessels, and a chest scan and abdominal scan that day; all were appropriate, to my mind.

I stayed at her bedside, and on the morning of the next day she had blood drawn from the arm where her intravenous line ran. Her packed cell volume went down about 10 points. Rather than repeating this simple test in her other arm, where blood was undiluted by intravenous fluid, another abdominal CT scan was ordered. I insisted on accompanying her to the scanner. Initially I was not allowed to go in the scanner control room, but the technologists finally relented when I told them again and again I was a radiologist. They were adamant that I could not be next to her during the examination in the scanner room and would have to sit in the control room. In fact, I would have to face

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Many doctors—including radiologists—have limited knowledge of the doses and of the potential consequences of the massive increase in diagnostic medical radiation exposure

toward Molly's scanner as this was a joint control room for a second scanner facing in the opposite direction and it would be a violation of the Health Insurance Portability and Accountability Act for me to look in that direction.

I didn't think things could get more bizarre, but they did. The study showed a small amount of blood in the cul-de-sac of the pelvis. The radiology resident insisted on doing a set of delayed images through the pelvis to assess the bladder and whether the blood was "changing." The resident then went to her attending physician, who wanted a third set of images through the pelvis. At this point I uttered the immortal words of Roberto Duran in his epic rematch with Sugar Ray Leonard, when he could not answer the bell at the start of the eighth round: "No mas, no mas"—no more.

I had seen a few examples of radiation overexposure in the community hospital setting in which I work and was beginning to act on this. Now I saw it happen to my own daughter. I was horrified. I asked the surgical chief resident if any thought had been given to radiation exposure in patients when doctors ordered CT studies. When she said that there was at the adjacent children's hospital, but not here, I replied, "If Molly gives birth to a salamander, I know who I am coming after."

A spiral scan of the abdomen or pelvis exposes a patient to about 10 mSv of radiation. The risk of one or two studies is negligible. But in young patients, five of these studies exposes a patient to the amount of radiation that produced carcinogenic effects in the atom bomb survivors of Hiroshima and Nagasaki. In the United States, an estimated 60 million CT studies were done in 2006. Many doctors—including radiologists—have limited knowledge of the doses and of the potential consequences of the massive increase in diagnostic medical radiation exposure. I have become a zealot in trying to stem this tide.

In my hospitals, I began to give talks on radiation safety issues to educate clinicians and radiologists. I formulated an essay on radiation safety for my referring providers. Insurers in New Hampshire embraced this as a true patient safety initiative, rather than merely a cost cutting manoeuvre. Anthem Blue Cross of New Hampshire is likely to make CT radiation safety an ingredient of its pay for performance programme for the state in 2007 and will use the precertification process to identify frequently exposed patients. The New Hampshire Radiologic Society has embraced plans for identifying and monitoring patients who may have been overexposed to radiation from CT scans. I have had invitations to speak at university centers and radiological societies. Molly (who has almost completely recovered) and I were featured in an article on this issue in the *Wall Street Journal* last year. I have been appointed to the recently convened panel on radiation dose in medicine of the American College of Radiology.

It is time that medicine in all specialties became aware of the epidemic of exposure to diagnostic radiation in patients and did something about it.

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Competing interests: SB is a paid consultant of New Hampshire Anthem Blue Cross/Blue Shield .

A classic account of living with bipolar disorder, p 1009

REVIEW OF THE WEEK

Why are so many doctors politically illiterate?

Julian Tudor Hart's latest book hauls New Labour's NHS reforms over the coals and laments the fact that so few doctors have the heart to fight back, writes **David Hunter**

Any reader who needs reminding of why the NHS was established should immediately seek out this book. Those familiar with Julian Tudor Hart's work will know him to be a passionate believer in the enduring values and principles of the NHS, which he calls a "gift economy." In this book he takes government to task for embracing wholesale the "marketisation" of health care and for dismantling a unique public service. His critique is wide ranging and questions whether political parties in contemporary life are any longer capable of providing leadership towards a future that does not entail the subordination of public services to global markets and rapacious multinational companies.

Tudor Hart's purpose in writing the book is to bring about an end to the "political illiteracy of most doctors." The only regret is that the book did not appear earlier, when it might have provided timely ammunition to those puzzled by, and angry with, what is happening to the NHS. It might have better equipped them to challenge the prevailing orthodoxy that has swept through the public sector in England with minimal opposition. Indeed, the book ends on precisely this note. If political parties are moribund and incapable of rising to the challenge then new coalitions must be assembled. In health policy, this means professionals becoming "politicised professions"—a conclusion that echoes the famous remark of Rudolf Virchow, the Prussian pathologist turned anthropologist, that "medicine is a social science and politics nothing but medicine on a grand scale."

There are numerous memorable turns of phrase in Tudor Hart's robust and uncompromising prose. For example, the NHS replaced a world that "plotted and grabbed" with one that "planned and shared." Only now are we returning to the world of plotters and grabbers—the "dog's dinner of public, private, and charity provision" which existed before 1948; so much for being modern and progressive.

Tudor Hart demolishes many of the cherished myths and assumptions underlying the government's reform strategy. On choice of referral, he claims that there is no evidence of mass popular demand for it. Moreover, such a policy fails to appreciate that clinical decisions are fundamentally different from business decisions. He caustically accuses the government of being in thrall to a faith based approach to reform that is devoid of all evidence. The criticism would be less puzzling had the government not made so much of its attachment to evidence based policy.

The real tragedy of what is being played out before our transfixed gaze is that those features of the NHS "which made it a distinct, unified, nationwide economy independent of business, designed to meet social needs rather than to maximise profit" are being abandoned. Instead, the commodification of health care is well under way, with the consequence that its consumption differs little from other goods and services.

Welcome though it is, the book left me feeling somewhat uneasy. Why are there not more Tudor Harts prepared to argue for their beliefs on the basis of their first hand experience of providing care? Perhaps if more clinicians were like Tudor Hart we would not be where we are today. Conceivably, too many healthcare professionals have been willing accomplices in the government's marketisation agenda. Moreover, fiascos such as that over the GP and consultant contracts have not helped their case, with charges of personal greed combined with a perceived diminution of service lowering trust. And yet, Tudor Hart is by no means uncritical of his peers, accusing many of them of being "arrogant, paternalistic and condescending" and of having failed to "democratise their work" and see themselves and their patients as co-producers of health.

If the book has a weakness it is a failure to confront the implications of such professional duplicity and malperformance. They have undoubtedly fuelled calls for reform and united critics of the NHS who believe that only markets can provide the necessary incentive to improve practice. That nothing could be further from the truth cuts no ice with a government driven by a deep suspicion of the professional hegemony it believes has become the NHS's fatal flaw. It is a major reason why professionals are viewed as the problem rather than the solution and why, instead of experienced practitioners like Tudor Hart advising government, we have a cadre of special advisers who, for the most part, have little real understanding of the complexities of providing health care and even less of improving health.

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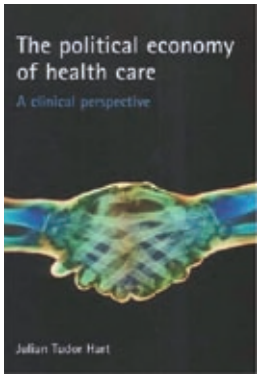
See pp 976-7 for an interview with Julian Tudor Hart.



The Political Economy of Health Care: A Clinical Perspective

Julian Tudor Hart

The Policy Press, £14.99, pp 336

ISBN 10: 1 86134 808 8

Rating: ★★★☆

Conceivably, too many healthcare professionals have been willing accomplices in the government's marketisation agenda

Emotional claptrap

FROM THE FRONTLINE
Des Spence

"Tears streamed down my face as I clutched my new born baby daughter—I was a father." Nauseating but powerful, isn't it, even if it isn't true? Using an emotional hook is the writer's Trojan horse. Emotions breach the highest and most fortified walls of cynicism. This emotional manipulation is the essence of the science of marketing, and as doctors we are under permanent siege.

Medical marketing opens the Pandora's box of the human emotions—fear, love, lust, greed, humour, superiority, beauty, anger, violence, pity, faith, and all the rest. Flick through any medical publication, look at the advertisements, and spot the emotional barb, from youthful models for hormone replacement therapy, to George Clooney lookalikes with erectile dysfunction, old smiling men holding garden hoses, and elderly couples with dementia holding hands. Images and language are always kept simple, accessible, and memorable in a bid to evoke deep emotional memory. Whether I want to or not, I can recall countless promotional and emotive advertising campaigns.

Similarly, medical sales representatives appeal to us emotionally. Well paid, well educated, plausible, "professional," and in every way designed to be flattering mirror images of ourselves, they are the embodiment of friendship and trust. Pharmaceutical representatives often change companies, but they rarely change their pitch because sales executives understand that the most fundamental emotion of all, trust, is a product of time.

Then there are the paid medical "experts." No need for us (and this often includes said experts) to read the stupefying papers, just look at a couple of lame PowerPoint pie charts, a crass cartoon, and the bullet point "take home" messages to be swallowed and tastelessly regurgitated. Everybody is happy, no questions are asked, and we all get home early.

But then there is the ultimate emotional charge, real patients. A single patient can distort NHS priorities, as no one can resist the reflection of self in his or her eyes. Patients, through various support groups, are increasingly becoming the Semtex of marketing devices—a celebrity patient can score a direct hit, with a mushroom cloud of positive radioactive fallout.

All this emotional spin might seem obvious to us gifted doctor types—and anyway, aren't we constantly under the unseen gravitational marketing pull of huge corporate planets as we hurtle through the capitalist void of our lives? But the truth is that most doctors remain largely oblivious, and there exists no political will to limit medical marketing. The NHS needs, therefore, a firewall against the attack of the marketing Trojans, or else ever more wasteful system crashes and slow running are inevitable. Compulsory modules on medical marketing at medical schools would surely be a start.

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Going public

IN AND OUT OF HOSPITAL
James Owen Drife

A television interview involves some heart searching. More so now than when I was a college spokesman. In that role you could reassure your colleagues (and yourself) that you were driven by duty. You received briefings and a line to take, and you could usually confine yourself to facts.

But when you're on your own, the phone call takes you by surprise. The questions are less research, more audition. "Are Britain's maternity services getting worse?" "Well, yes and no," you reply, "or to put it another way, no and yes." Finally the voice asks: "Would you be willing to talk to us?"

Would you? Do you trust the person behind the voice? She sounds concerned and well informed and her programme has a good reputation. The real question is, how deep is your despair? Services across the country are now controlled by national politicians who no longer listen to practising doctors. Let's go for it.

"We're in your area on Saturday," says the voice, "but in the morning we're interviewing a real person." Shared irony is a good sign. I ask if the interview will be over in time for me to get to the opera. The reply is not entirely reassuring.

Our managers, relaxed and helpful, say it's okay to film in the hospital. On Saturday afternoon, men with drills begin long awaited repairs to the lift. I feel a pang of conscience asking them to stop. The television crew decide my untidy bookshelves make a good background. "We like random," says the cameraman, removing my wall clock.

The interviewer already knows all the facts and figures. What she wants are opinions, succinctly expressed. Professors don't do succinct. She nudges me to be more outspoken, but I say I can't bring myself to frighten women viewers. Gently, she says this may be the only way to change things. We're both thinking the same: what a way to run a health service.

A final take in the ward. Beds are screened off, but the midwife and I sign a release allowing our images to be distributed "throughout the universe." Big in Ursa Minor, maybe. Will any of this be used? Will it make a difference? I suspect not. Anyway, I made it to the opera. The heroine died but, thank goodness, she wasn't pregnant.

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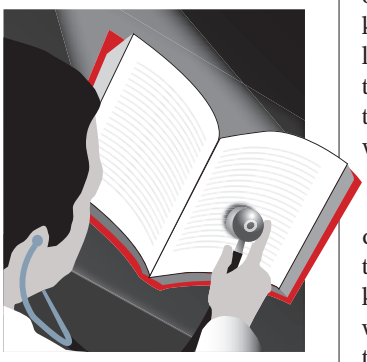
Illness as metaphor

BETWEEN THE LINES
Theodore Dalrymple



Greene's wallowing about in the swampy analogy between leprosy and life makes me feel distinctly queasy

Not long ago, I published a short article in which I mentioned that some of the best people I had ever known—the only ones who seemed to me genuinely to love humanity—were nuns working in Africa. Not being religious myself, I had no particular axe to grind, and was surprised by the vehemence of the hostility my remark gave rise to. I hadn't realised that so many people loathed nuns with a terrible, if somewhat forced, loathing. But how could anyone loathe people who had devoted their lives to looking after people with leprosy, I wondered?

In Graham Greene's novel, *A Burnt-Out Case*, a man called Querry (a composite of Query and Querulous, perhaps), who is a world famous architect, buries himself in a Catholic missionary leper-colony in a remote part of the Congo, towards the very end of Belgian rule.

Querry is the burnt-out case of the title: life in general being a disease from which he has hitherto suffered. I am not sure that I much care for leprosy as a metaphor for life.

The father superior at the mission discusses Querry's motives with Dr Colin, the atheist medical officer, who has devoted 15 years of his life to looking after people with the disease.

"What do you think of Querry, father? Why do you think he's here?" [asked Dr Colin].

"I'm too busy to pry into a man's motives . . . Perhaps he is only looking for somewhere quiet to rest in."

"Few people would choose a leprosarie as a holiday resort . . . I was afraid for a moment that we might have a leprophil on our hands."

"A leprophil? Am I a leprophil?"

"No, father. You are here under obedience. But you know very well that leprophils exist, though I daresay they are more often women than men."

Does the concept of leprophilia cast any light on the nuns whom I knew in east and west Africa? I don't think so. Their compassion was as far as possible from the exhibitionist variety of, say, modern celebrities. Their work was carried out in complete obscurity; they had nothing and lived simply; many of them were old and would be buried in unmarked, or barely marked, graves as their reward.

What is Querry running away from, that makes him allegedly a burnt-out case? Firstly, he has lost his faith in the Catholicism of his youth; secondly, as the veteran of many affairs, he realises that he is incapable of love for a woman; and thirdly, he realises that his creativity as an architect has dried up. (I must confess that I wish that most 20th century architects had buried themselves in the Congo, preferably before they built anything.)

Dr Colin says of Querry at the end of the book, "[It] was like the crisis of a sickness—when the patient has no more interest in life at all."

Greene's wallowing about in the swampy analogy between leprosy and life makes me feel distinctly queasy. It seems to be an invitation to self pity by the privileged and the healthy, an invitation that is hardly necessary.

For is there anyone so lacking in compassion that he feels no pity for himself?

Theodore Dalrymple is a writer and retired doctor

MEDICAL CLASSICS

A Mind That Found Itself

By Clifford Whittingham Beers

First published in 1908

Long before celebrities started going public about their struggles with mental disorders, Clifford Beers produced a vivid personal account of what it's like to live with bipolar disorder. *A Mind That Found Itself,* published almost 100 years ago, is widely regarded as having helped launch the mental hygiene movement, the precursor of today's mental health consumer movements. The work is also a primer on bipolar disorder while being a good, if not gripping, read.

In a sense, the story is simple. A recent Yale graduate becomes depressed, attempts suicide, and is admitted to hospital. While still hospitalised, he becomes psychotically manic and spends several years in psychiatric institutions before being released. What makes the story compelling is Beers' deft and punchy writing; his arresting descriptions of his behaviour and thinking; his bitingly insightful observations of others, especially the medical professionals of the day; and his struggles to be treated with dignity.

In an age of bland diagnostic schemes, Beers' descriptions of his symptoms are refreshing. When he rhapsodises about being an "embryonic Raphael" whose "Midas-like touch" could transform ordinary corncobs decorated with small thermometers into coveted objets d'art, the reader can feel his manic exhilaration. The experience is no less vivid when he recounts the exquisite anguish of his monumentally lethargic depressive states, in which his brain "felt as if pricked by a million needles at white heat." Such misery drove Beers to view death as potentially liberating, leading him, not surprisingly, to carefully conceal his suicidal plans. His deception of his family reminds us that simplistic notions about suicide prevention can easily fall short of the mark. Yet, he also reminds us that the ambivalence of the suicidal patient may be life saving. In a suicidal jump, he somehow altered his trajectory so that his fall resulted in mere injuries rather than death.

Beers elicited a range of reactions from his caregivers, from placement in straitjackets and outright physical assaults to compassionate understanding. Without the assistance of today's modern pharmacologic marvels, certain individuals could "control" him in the midst of his manic frenzies, but the mere presence of other practitioners threw him into a rage. Beers' descriptions of his interactions with staff always remind me of the therapeutic importance of my relationship with my patients and the dangers of unquestioningly accepting the prevailing therapeutic culture of the day, whether that includes reliance on straitjackets or on pills.

Most patients cannot articulate their thoughts or describe their experiences so well. By doing so, Beers gave a voice to mentally ill people and left a text for inquiring clinicians.

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